

## Portable Lifting Seat

---

Robert J. Lessels/LA02  
205-544-6539

Licensing to manufacture a portable lifting seat developed and patented by MSFC in Huntsville, Alabama, is underway. For individuals with degenerative knee or hip-joint diseases or injuries, the easily carried device offers a new degree of freedom, including the ability to attend movies and go out to dinner, among other things.

Using funds provided by the Technology Utilization Office, a team of engineers from MSFC's Structures and Dynamics Laboratory—with medical guidance from an orthopedic surgeon from Southern Hills Medical Center in Nashville, Tennessee—developed a lightweight, battery-powered lifting device capable of assisting individuals weighing up to 300 pounds with severe degenerative conditions in their knees, hips, and/or backs with sitting down or standing up. At the time work began on the effort in 1991, an estimated 8 million individuals could benefit from the seat.

The device consists of a battery-powered motor that drives a gear train and crank assembly. The gears and crank lift up and push forward simultaneously, ensuring the padded seat remains at a proper angle to maintain contact with the individual being assisted. A three-position switch enables the user to raise, lower, or stop the seat. A carrying handle completes the device.

Nurses and orderlies in hospitals and nursing homes could find the seat useful in protecting themselves from back strain incurred when lifting patients and in assisting them in sitting down. The seat carries the weight of the patient, as the nurse or orderly safely guides and steadies the patient.

**Sponsor:** Office of Commercial Development and Technology Transfer

**Industry Involvement:** Southern Hills Medical Center, Nashville, Tennessee

